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6 NOTES

6.1 Definitions. The definition's below shall apply to this specification.

6.1.1 Alarm. The term "alarm," used in conjunction with monitoring, shall denote a situation in which an out-of-tolerance condition as sensed by the monitor function, has existed for a minimum period of time necessary to provide an acceptable estimate of parameter value.

6.1.2 Approach Azimuth. The function that provides lateral guidance to aircraft in the approach region.

6.1.3 Approach Elevation. The function that provides vertical guidance in the approach region.

6.1.4 Auxiliary Data. Data transmitted by the ground equipment, in addition to basic data, that provides:

a. Supplementary ground equipment siting information for use in refining airborne position calculations

b. Meteorological information

c. Runway status

d. Other supplementary information

6.1.5 Basic Data. Data transmitted by the ground equipment associated directly with the operation of the landing guidance system, and advisory data on the MMLS ground equipment performance level.

6.1.6 Beam Center. The midpoint between the -3 dB points on the leading and trailing edges of the scanning beam main lobe.

6.1.7 Beamwidth. The width of the scanning beam main lobe measured at the -3 dB points and defined in angular units on the antenna boresight, in the horizontal plane for the azimuth function, and in the vertical plane for the elevation function.

6.1.8 Category I. A level of service that allows a precision approach down to a decision height of 200 ft and with runway visual range of at least 2600 ft.

6.1.9 Category II. A level of service that allows a precision approach down to a decision height of 100 ft and with runway visual range of at least 1200 ft.

6.1.10 Communications Channel. A functional path along which a signal may be sent in one direction.

6.1.11 Commercial Off-the-Shelf Item. A product in regular production currently or previously sold in substantial quantities to the general public.

6.1.12 Coverage Sector. A volume of airspace within which service is provided by a particular function and in which the signal power density is equal to or greater than the specified minimum.

6.1.13 DME/P. The range function associated with the MMLS. DME/P is compatible with standard navigation DME while providing improved accuracy and additional channel capabilities.

6.1.14 Dynamic Sidelobe Level. The level that is exceeded three percent of the time by the scanning antenna far field radiation pattern exclusive of the main beam as measured at the function scan rate using a 26 kHz beam envelope filter. The three percent level is determined by the ratio of the sidelobe duration which exceeds the specified level to the total scan duration.

6.1.15 End-to-End Integrity Check. A check in which an out-of-tolerance signal for each monitored parameter is intentionally radiated to verify the monitor's ability to detect the fault and effect an appropriate control action.

6.1.16 False Alarm. The indication of an MMLS fault condition which cannot be confirmed upon retest using the BIT fault detection/isolation capability of the MMLS. Alarms associated with the occurrence of momentary power interruptions, transients or out of limits conditions, whether operating from external or battery power sources, are not to be considered false alarms.

6.1.17 False Course. An undesired course which the MLS receiver acquires and tracks due to reflections of the scanning beam, scanning beam antenna sidelobe, scanning beam antenna grating lobes, or incorrect clearance.

6.1.18 Fault. Any failure of the MMLS equipment to perform within acceptable performance limits when the system has been properly installed and checked out. This includes performance degradation beyond specification limits, monitor alarm occurrences, and hard failures when the system is operating from external power sources or in the battery powered mode. A momentary fault indication associated with the occurrence of electrical power source transients, interruptions, or other out of specification electrical power conditions shall not be classified as a fault occurrence.

6.1.19 Field Sensor. A sensor located external to the equipment being monitored that is capable of detecting equipment failures and out-of-tolerance conditions.

6.1.20 Final Approach Mode. The DME/P mode of operation that is characterized by wide bandwidth processing of signals and time delays (both interrogated range measurement and transponder reply delay) that are based on measurements at the virtual origin of the pulse.

6.1.21 Fraction of Failures Detected (FFD). A measure of the effectiveness of detecting system failures during operating checkout: the number of failures which are detected by BIT during operating checkout divided by the total number of failures.

6.1.22 Fraction of Failures Isolated (FFI). A measure of the capability to functionally isolate failures: the number of failures, each of which can be functionally isolated within a specified time to a specified LRU or group of LRUs, divided by the total number of failures.

6.1.23 Growth Capacity. The capacity of a processing system unavailable at the time of delivery that may be added without modification or redesign of existing hardware or software.

6.1.24 Gust. A peak wind disturbance in excess of the steady state wind lasting up to 20 seconds.

6.1.25 Instrument Landing System (ILS) Point "A". A point along a 3° glidepath measured along the extended runway center line in the approach direction a distance of 4 nmi from the threshold.

6.1.26 Initial Approach Mode. The DME/P mode of operation that is similar to a conventional DME (DME/N) operation where narrow band processing is used, and time delays (both interrogated range measurement and transponder reply delay) are based on measurements at the 50 percent of maximum voltage amplitude level on the pulse leading edge.

6.1.27 Integral Sensor. An integral sensor is one that is located within the antenna aperture that samples the radiated signals for monitoring purposes.

6.1.28 Integrity. The probability that the ground equipment will not radiate hazardous MLS guidance or data signals during a specified time interval. Hazardous guidance or data includes any out-of-tolerance conditions that would not be clearly recognizable to a pilot.

6.1.29 Interrogation Signal. A pulse pair radiated by a DME interrogator.

6.1.30 I/O Port. A device, or a place of access to a device, which is a component of a processing system and which provides the interface between that processing system and one or more communications channels.

6.1.31 Line Replaceable Unit (LRU). An item which is to be functionally and physically isolated and replaced during organizational maintenance. The item is capable of being removed and replaced without substantial disassembly of equipment. Substantial disassembly is defined as any remove and replace action which causes the maintenance technician to exceed the specified MTTR.

6.1.32 Man Transportable. Items which have integral provisions for man transport for limited distances (100-500 meters). Upper weight limit is 65 pounds per individual.

6.1.33 Mean Course Error (MCE). The mean value of the azimuth error along a specified radial of an azimuth function.

6.1.34 Mean Glide Path Error. The mean value of the elevation error along the specified glidepath.

6.1.35 Mean Time Between Corrective Maintenance Actions (MTBCMA). A measure of system reliability related to demand for corrective maintenance manpower: the total number of system life units divided by the total number of failures which are repaired by corrective unscheduled maintenance.

6.1.36 Mean Time Between Critical Failure (MTBCF). A measure of mission reliability: the total amount of mission time divided by the total number of critical failures during the mission. A critical failure is a failure or a combination of failures, that prevents an item from performing a specified mission.

6.1.37 Mean Time Between False Alarms. The number of MMLS system operating hours divided by the total number of false alarms.

6.1.38 Mean Time to Repair (MTTR). A measure of maintenance time on equipment only: the sum of repair time divided by the total number of failures. Repair time includes isolation, removal, replacement, alignment, and checkout.

6.1.39 MLS Approach Reference Datum. A point over the runway centerline 50 ft above the approach threshold.

6.1.40 MLS Datum Point. The point on the runway centerline closest to the phase center of the approach elevation antenna.

6.1.41 Multipath. The effect of a reflected signal on the quality of the primary signal at the receiver.

6.1.42 Path Following Noise (PFN). That portion of the guidance signal error that could cause aircraft displacement from the mean course line or mean glide path, as appropriate.

6.1.43 Proportional Guidance Sector. The volume of airspace within which the angular guidance information provided by a function is directly proportional to the angular displacement of the airborne antenna with respect to the zero angle reference.

6.1.44 Reply Efficiency. The ratio of replies transmitted by the transponder to the total of on-channel interrogations received from a single interrogator.

6.1.45 Runway Threshold. The beginning of that portion of the runway usable for landing.

6.1.46 Shop Replaceable Unit (SRU). A replaceable subassembly, module, or component of the MMLS equipment as designated in the MMLS Maintenance Technical Orders for replacement at the depot level of maintenance.

6.1.47 Squitter. Pulses generated within the DME to maintain a controlled transponder output transmission rate.

6.1.48 Time Division Multiplex (TDM). A method of sequentially transmitting a number of functions on a single frequency channel by means of time separation.

6.1.49 Threshold Sensitivity. The minimum RF power level of a signal required at a receiver input which satisfies specified accuracy requirements.

6.1.50 TO and FRO Scan. The first and second scans, respectively, of the scanning beam from one coverage limit to the other. The direction of the FRO scan is opposite to the direction of the TO scan.

6.1.51 Virtual Origin. That point in time, associated with the leading edge of the pulse, where the linear extension of a straight line through the points of 5 percent and 30 percent of the maximum voltage amplitude of the pulse intersects the zero voltage axis as specified in figure 3-2 of ICAO SARPS Annex 10.

10 APPENDIX I

10.1 Scope. The contents of this appendix define reliability verification test and maintainability demonstration requirements.

10.2 Reliability Verification Test (RVT)

10.2.1 Test Prerequisites. The contractor shall assure that the following specific tasks/actions are accomplished prior to start of RVT.

a. The test item(s) (i.e., system/equipment) shall be clearly described and a configuration audit performed to the unit level. All known deficiencies shall be corrected and the corrective action verified prior to start of test so that the test items(s) represents an acceptable baseline configuration.

b. Copies of the Government-approved Reliability Test Plan and Procedures shall be available for use.

c. All test items immediately prior to the start of the RVT shall be subjected to, and shall have successfully passed, detailed tests conducted to verify that the items fully meet their performance specification requirements.

d. Arrangements shall be made for test monitoring by cognizant Government personnel, and test logs are to be cosigned by Government and contractor representatives.

e. Test equipment calibration logs shall indicate that the test equipment is properly calibrated.

f. The test shall be conducted in a controlled area that can be secured to prevent unauthorized access to the test facilities, test equipment, test records, and the test item(s) once the RVT has officially started. Access to the testing area shall be limited to personnel assigned to the test unless Government escorted. A written list of all such personnel shall be maintained by the contractor and made available to the Government upon request.

10.2.2 Conditions of Test.

a. The test item(s) shall be mounted and connected as shown in the reliability test procedures.

b. The system shall be operated in the environments specified in figure 9. During operating segments of the test, test items shall be exercised in as near operational use as possible. This includes the use of various operating modes and the handling of the various required data or information. In order of preference, the data or information handled by the test item will be actual recorded operational data/information, simulated operational data/information, or BIT patterns.

c. All test equipment shall bear current calibration stickers/tags during their use in the RVT.

d. Test time for the RVT shall accrue from the beginning of RVT to the accept or reject point, including operating and nonoperating time, but excluding down time for preventive or corrective maintenance.

e. Test records for each test item shall be maintained. As a minimum, the test records shall include:

1. Systems/equipment serial numbers

2. Elapsed reliability test time and environmental condition for each failure

3. Test log data sheets

4. Failure reports

5. Failure data from which MTBCMA can be verified. Verification of the MTBCF shall be by analysis and in accordance with table III

6. Failure data from which the requirements for False Alarms can be verified

f. All PM shall be kept to an absolute minimum and shall be defined in the RVT plan, and shall be as required in the system/equipment specification. All PM shall be performed prior to RVT and performed thereafter per the required periodicity. No additional PM shall be performed while the test item(s) is in an operational mode or during system/equipment repair. Readjustment of operational controls is not considered PM. Anticipation of failure shall in no case be justification to change either the prescribed intervals or expand the list of authorized replacements.

10.2.3 Failure Detection, Correction, and Analysis.

a. Detection of Failure: A failure shall be recorded as having happened at the time it is detected by one or more of the following methods that are listed in order of desired use. The detection method used shall assure a confidence of failure detection of greater than 99 percent.

1. Continuously monitor for failure while operating using:

(a) Normal system outputs

(b) BIT

(c) Special test equipment

2. Periodically, at least once every 8 hours, test for failures:

(a) Without stopping RVT

(b) Stop RVT, test for failures, restart RVT (least desirable and no maintenance shall be allowed while the RVT is stopped)

b. Corrective Action: To continue the RVT, failures shall only be repaired in accordance with the design and by the methods described in the Technical Orders. If any engineering or manufacturing design changes are needed to correct design deficiencies, the RVT shall start at the beginning after the design changes have been made and all previous verifications requalified.

c. Failure Analysis: As part of the failure analysis the cause of each failure shall be investigated adequately to determine relevancy of the failure. Methods such as test, application study, dissection, X-ray analysis, microscopic analysis, spectrographic analysis, etc., will be employed for this purpose. These investigations will be performed by specialists experienced in state-of-the-art failure analysis and procedures as well as acquainted with the material, processes, and techniques used in the fabrication or manufacture of the failed part. The failure analyst will have at his disposal a complete documented history of the failed part including prior inspections, environmental exposure, electrical testing, and operational experience in his efforts to trace the cause of failure and recommend corrective action. Over stressing of associated and adjacent components and identical problems will be considered.

A copy of each report shall be kept as part of the RVT records. The contractor and the Government shall indicate on each report their respective positions on the relevance as an RVT failure.

10.2.4 Determination of Compliance.

a. Failure Definitions:

1. Relevant Failure: A failure which can be attributed, after failure analysis, to any of the following:

(a) Not meeting system performance requirements including failures in a redundant switching control.

(b) Hardware or software design defects

(c) Manufacturing process, material, or workmanship defects

(d) Physical or functional deterioration (such as wearout, fatigue, or tolerance degradation)

(e) Failures of parts of known limited life (such as batteries) occurring prior to the end of the stipulated period are relevant

(f) Intermittent failures

(g) Failures due to incorrect instruction in the technical manuals used during the RVT

(h) Failures that cannot be duplicated or for which no cause could be determined

(i) Failures which are not proved to be nonrelevant shall be considered as relevant

2. Nonrelevant Failures: A failure that after failure analysis is proven to the satisfaction of the Government to be caused by the following:

(a) Damage resulting from improper installation

(b) Failure of test instrumentation or monitoring equipment that is external to the test vehicles under test

(c) Interrupted operation caused by external power failures

(d) Overstress, beyond the design requirements of the system or defined in the Government or prime item specification, applied to test vehicles under test due to a facility fault

(e) Damage resulting from accident or mishandling by personnel performing the RVT

(f) Failures due to procedural errors by technician or operator

(g) Dependent failure (i.e., a failure of a part(s) as a direct result of a failure of another part within the system). It must be established by the contractor to the satisfaction of the Government that the failure(s) was dependent upon another part failing and was not an unrelated incident occurring at the same time

(h) Failure of certain parts (limited life parts) occurring after their known useful life has expired will not be counted as relevant if identified and approved by the Government prior to start of RVT

b. Accept/Reject Decision:

1. Verification that the MTBCMA requirement(s) has been met shall be determined in accordance with figure 10.

2. Verification that the MTBCF requirement(s) has been met shall be determined in accordance with table III.

3. Verification that the false alarm requirement has been met shall be determined as follows. To determine the mean time between false alarms divide the total RVT test time by the number of BIT failure indications for which no failure was repaired.

c. Notification: If the final classification of all failures has been made and it is determined that a reject decision has been reached, the contractor shall be formally informed by the Government. Prior to a subsequent RVT, all test preparation requirements must be met with emphasis on correction of deficiencies related to the failures during the initial RVT.

10.2.5 Post-Test Requirements. After completion of the RVT all test item(s) shall be subjected to and shall successfully pass the detailed test conducted to verify that the item(s) fully met its performance specification requirements.

10.3 Maintainability Demonstration (MD).

10.3.1 Predemonstration Activities. The contractor shall assure that the following specific tasks/actions are accomplished prior to the start of the MD.

a. The demonstration item(s) (i.e., system/equipment) shall be clearly described and a configuration audit performed to the configuration item.

b. All demonstration item(s), PME, and peculiar test equipment, shall be thoroughly checked for proper operation in the MD setup. Each demonstration item shall have been subjected to and passed the Government formal qualification DT&E.

c. All applicable documents identified in the MD plan shall be available. Special emphasis should be given to obtaining validated technical orders.

d. Arrangements shall be made for demonstration monitoring by cognizant Government engineering personnel. Demonstration data sheets shall be cosigned by Government and contractor representatives at completion of each maintenance action/task.

e. Each demonstration shall be held in a controlled area that can be secured to prevent unauthorized access to the facilities demonstration equipment, demonstration record(s), and the demonstration item(s). Access to the demonstration area shall be limited to personnel assigned to the demonstration unless Government escorted. A written list of all such personnel shall be maintained by the contractor and made available to the Government upon request.

10.3.2 Conditions of Demonstration. The following paragraphs describe the conditions under which the MD will be conducted:

a. Each MD shall be performed at the facility where the PME and the test equipment can be most effectively gathered. Organizational MD will usually be at the contractor facility. Depot MD will usually be at the applicable Air Logistics Center. The demonstration area shall contain only the item(s) to be demonstrated, the specified test equipment, the Government-approved Technical Orders, and the Government-approved spares required by the demonstration team to complete the selected maintenance tasks.

b. The MD shall be accomplished by maintenance technicians from the organization that will perform the operational maintenance. These technicians shall be trained and certified by the contractor and equivalent to the specified skill level.

c. The items to be demonstrated shall be in an operating configuration.

10.3.3 Demonstration Team. The demonstration team will consist of both contractor (CR) and Government (G) representatives, as shown below:

a. Demonstration director and system engineer (G)

b. Contractor system engineer (CR)

c. Failure insertion technicians (CR)

d. Maintenance technicians (G)

e. Procuring activity witness (G) (this may be 10.3.3.a above or a plant representative)

f. Contractor witness (CR) (this may be 10.3.3.b above, or a contractor inspector, or quality control person)

10.3.4 Specific Demonstration Requirements. The following paragraphs describe the requirements of the formal maintainability demonstration:

a. Objective. The objective of the formal maintainability demonstration is to verify the achievement of contract requirements.

b. Selection of Failures. In the maintainability demonstration plan:

1. For the organizational level, the contractor shall list a minimum of 100 continuous and total failures (not intermittent or degraded). Each failure must be inserted and removed without damage to the item being demonstrated. The distribution of the failures among the major items will be based on the current failure rate prediction; apportioning more failures to the items with the higher failure rates, but ensuring that some failures are identified for each LRU. The contractor shall also list each adjustment, both internal and external to the equipment, that will cause the equipment to be out of specification.

2. For the depot level, the contractor shall list those SRUs that will use unique depot test equipment or unique procedures on common depot test equipment. The contractor shall list a minimum of five failures per SRU that can be used to demonstrate the capability of the depot test equipment to isolate a failure to the discardable item. The Government will randomly select one or more failures per SRU to be demonstrated.

c. Performance of Tasks.

1. Induction of Failures and Verification of Detection.

(a) For each maintenance level, the failure insertion technician will insert, in random order, each of the selected continuous total failures and nonfailures into the equipment by reworking or replacing parts or assemblies as necessary. BIT indication of each inserted failure will be checked and recorded.

(b) For the organizational level only, the failure insertion technician will vary each adjustment in each direction until the BIT indicates a failure, and will then determine whether the item is within specified performance (i.e., false alarm) or out of specifications (i.e., proper failure detection). Adjustments which are found to be out of specification will be submitted to the maintenance technician for failure isolation.

(c) For the organizational level only, the failure installation technician will induce the selected software errors and will note whether the BIT indicates the failure.

2. Corrective Maintenance.

(a) The maintenance technician will be called in after each hardware failure or nonfailure is inserted, will verify each failure or nonfailure as prescribed by the technical orders, will isolate each failure, and will repair the selected failure.

(b) The contractor's system engineer will observe and record on the Maintainability Demonstration Log, figure 11, the detailed time and task observations. Upon completion of the task, the data will be summarized into elapsed times and recorded on the Maintainability Demonstration Summary Data Sheet, figure 12.

(c) After completion of the prescribed maintenance for each inserted failure, the maintenance technician will leave the demonstration area. The failure installation technician will correct the failure if a repair has not been made and insert the next failure.

(d) Isolation of a failure will be unsuccessful when the time specified for the MTTR has elapsed or when the failure is erroneously identified. Repair of a failure will be terminated when three times the MTTR has elapsed. No time limits are established for the depot level demonstrations, but the failure isolation must be completed in a reasonable time.

(e) All replacement subassemblies (spares) will be immediately available to the maintenance technician at the organization level. No repairs will be made for the depot level demonstrations.

(f) In the event the maintenance technician fails to find the failure or an incorrect diagnosis is made by the technician, the failure insertion technician will remove the inserted failure, check the system or item for proper operation, and insert the next failure.

(g) In the event an unintended failure occurs, or one is induced by the maintenance technician while isolating a failure, the data taken for that failure will be invalidated. The repair will be made by the failure insertion technician and the system or item checked for proper operation.

(h) Data recorded in (f) and (g) above will be analyzed to identify potential improvements in the procedures, technical orders, built in test, computer program, or equipment design. Recommendation for corrective action will be included in the Maintainability Demonstration Report.

3. Restoral Time by Switching to Redundant Items.

(a) Wherein the system has redundant items, all failures induced by the failure insertion technician shall be induced in the primary operating item.

(b) As prescribed, system critical performance will be restored automatically or manually by the maintenance technician.

MAINTAINABILITY DEMONSTRATION LOG

TASK NO._____ TECHNICIANS:_____ ITEM_____
DATE:_____ WITNESSES:_____ PAGE_____ OF_____
_____
_____

EVENT NO.	TIME MIN/SEC	EVENT	COMMENTS

Witnessed By: U.S. Government Representative: _____
Contractor Representative: _____
Date: _____

Figure 11. Maintainability Demonstration Log

ITEM_____ ELAPSED TIMES READ IAW MIL-STD-415

MAINTAINABILITY DEMONSTRATION SUMMARY DATA SHEET

Shift No._____
Date_____
Page_____ of_____

(1)	ELAPSED TIME MIN:SEC							(9)	(10)	(11)	(12)	(13)
	(2)	(3)	(4)	(5)	(6)	(7)	(8)					
Task Number	Detection	Isolation	Dis-assembly	Inter-change	Re-assembly	Alignment	Check-Out	Total Corrective Maintainance Downtime (in Minutes)	Remarks	Repaired By	Monitored By	Date

Witnessed: U.S. Government Representative _____ (Signature) _____ (Date)

CONTRACTOR Representative _____ (Signature) _____ (Date)

Figure 12. Maintainability Demonstration Summary Data Sheet

(c) The contractor system engineer will record the detailed times for each inserted failure on the Maintainability Demonstration Log, figure 11. Upon completion of the task, the data for automatically restored failures will be summarized into elapsed time and recorded on a Redundancy Summary Sheet, indicating the task number, restoral times, and remarks.

d. Determination of Acceptance or Rejection.

1. Fraction of Failures Detected. Determine the total of the inserted continuous total failures (e.g., 200), the inserted nonfailure (e.g., 10), and the number of adjustment induced failures (e.g., twice the number of adjustments each to be done both ways). Divide this into the number of these failures/nonfailures which were detected properly. The resultant must exceed the specification requirement in 3.4.2.1.1.1.

2. Fraction of Failures Isolated. Divide the number of failures which were isolated within one MTTR by the total number of failures, i.e., continuous total failures plus adjustment degraded failures. The resultant must exceed the specification requirements in 3.4.2.1.2.1.

3. Mean Time to Repair. For the inserted failures for which repair was required, sum the repair times and divide by the number of failures. The resultant must be less than the specification requirement for MTTR in 3.4.2.1.2.2.

10.3.5 Redemonstration Phase. If, upon analysis of the demonstration data, it is determined that the item(s) does not meet the specified requirements, further analysis of the demonstration data shall be made to determine where improvements are needed in the procedures, technical orders, built-in-test, computer program, or equipment design. A plan for corrective action and redemonstration shall be submitted to the procuring activity within 15 calendar days.

APPENDIX II

20. MMLS Tailoring of MIL-C-4150J, Waterproof Transit Cases

20.1 The following specifications form a part of the acquisition requirements of MIL-C-4150J paragraph 6.6

1.1 Scope

No loads exceeding 250 lbs net.

1.2 Classification

Type 1 (waterproof)
Style 1 (transit case)
Classes A (maximum gross weight (mgw) ≤ 150 lbs) and B (mgw > 150 lbs)
variety HC (hinged closure)

3.1 First Article

First Article inspection required for all cases developed under this contract.

3.2.4 Fire Retarding Material

Fire retardant materials not required.

3.4.2.1 Security Seal

Security seal not required.

3.4.6 Lifting Rings, Class B Cases

Lifting rings not required. Handles are required to replace lifting rings.

3.4.8-9 Vacuum and Pressure Relief Value

Manual vacuum and pressure relief valve acceptable.

3.4.10 Relative Humidity Indicator

Relative humidity indicator not required.

3.4.14 Desiccant

Exempt requirement

3.5.2 Leakage

Exempt requirement

3.6 Color

Exterior surfaces shall be green.

3.7 Finish

External surfaces shall be resistant to damage from decontamination agents specified in ARCSL-CR-81503, excluding DS2 and STB.

3.9 Marking

Identification and marking shall be in accordance with the SOW.

3.11.1 Drawings

Preliminary level III outline drawings shall be maintained by the contractor and made available for design reviews and audits.

3.11.2 First Article Inspection Plan

First article inspection plan not required, except all developed cases need to be tested.

3.11.3 First Article Inspection Report

First article inspection report not required except for all developed cases.

4.0 Quality Assurance Provision

For all cases except the developed cases, the contractor shall certify compliance with all requirements of section 3 (as tailored) by showing similarity to previously fabricated and certified cases than by conducting a first article inspection. Certification shall be documented in contractor format.

5.2 Packaging

Not applicable

5.3 Marking

Not applicable

GLOSSARY

A	analysis
AC	alternating current
AF	Air Force
AFCC	Air Force Communications Command
AFLC	Air Force Logistics Command
AFM	Air Force manual
AFP	Air Force pamphlet
AFR	Air Force regulation
AFSC	Air Force Systems Command
ANSI	American National Standards Institute
ATC	air traffic control
AZ	azimuth
BIT	built-in test
BTU	British thermal unit
C	Celsius
CCG	combat communications group
CCT	combat control team
CDRL	contract data requirements list
CI	configuration item
CR	contractor representative
CUCV	commercial utility cargo vehicle
CW	continuous wave
D	demonstration
DA	Department of the Army
dB	decibel

dBW/m^2	decibels referenced to one watt per square meter
DC	direct current
DME	distance measuring equipment
DME/N	normal distance measuring equipment
DOD	Department of Defense
DPSK	differential phase shift keying
DT&E	development, test, and evaluation
EL	elevation
EMI	electromagnetic interference
ESC	Electronic Systems Center (AFSC)
ESS	environmental stress screening
FA	final approach
FAA	Federal Aviation Administration
FEDI	failure experience data interchange
FFD	fraction of failures detected
FFI	fraction of failures isolated
FMC	full mission capability
FMECA	failure mode effects and criticality analysis
FRACAS	failure recording, analysis, and corrective action system
ft	feet
g/m^3	gram per cubed meter
GFB	Government-furnished baseline
GFE	Government-furnished equipment
GIDEP	Government/industry data exchange program
HMMWV	high mobility multipurpose wheeled vehicle
HOL	higher order language

hr	hour
HQ	headquarters
Hz	hertz
I	inspection
IA	initial approach
ICAO	International Civil Aviation Organization
ILS	instrument landing system
IMS	interim mission support
in	inch
I/0	input/output
kt	knot
lb	pound
LRU	line replaceable unit
MAC	Military Airlift Command
MD	maintainability demonstration
MEDEVAC	medical evacuation
MEP	mobile electric power
MLS	microwave landing system
MMLS	Mobile Microwave Landing System
MOSC	military occupational specialty code
MTBCF	mean time between critical failures
MTBCMA	mean time between corrective maintenance actions
MTBFA	mean time between false alarms
MTTR	mean time to repair
nmi	nautical mile
OCI	out-of-coverage indication

OT&E	operational test and evaluation
PFN	path-following noise
PM	preventive maintenance
PME	prime mission equipment
PRF	pulse repetition frequency
psig	pounds per square inch gauge
QWROTES	quick wartime restoral of TRACALS equipment and services
RF	radio frequency
RTCA	Radio Technical Commission for Aeronautics
RVT	reliability verification test
SARPS	standards and recommended practices
sec	second
SOW	statement of work
SRU	shop replaceable units
T	test
TACAN	tactical air navigation
TDM	time-division-multiplex
TM	technical manual
TRACALS	traffic control and landing systems
TRSB	time reference scanning beam
UPS	uninterruptable power system
U.S.	United States
USAF	United States Air Force
USAISC	U.S. Army Information Systems Command
µs	microsecond
WRSK	war readiness spares kit